III. Amendments to the Claims

Please amend the above-identified application as follows. The following amendments are made for purposes of clarification and not for purposes of patentability. The following claims will replace all prior versions of the claims in the application:

1. (Currently amended) A device for processing containers having a plurality of biological sample wells wherein at least one of the wells includes a biological sample, the device comprising:

at least two processing stations;~~,~~

a sample guide between the at least two processing stations;~~,~~ and

an actuator of the container from at least one processing station to at least another processing station.

2. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a processing plate dispenser.

3. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a processing plate agitator.

4. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a processing fluid dispenser.

5. (Original) A device as in claim 4, wherein said processing fluid dispenser comprises a set of injectors.

6. (Original) A device as in claim 5, wherein said injectors are recessed.

7. (Currently amended) A device as in claim 5, wherein said injectors are stationary.

8. (Currently amended) A device as in claim 4, wherein said processing fluid dispenser comprises:

a reservoir comprising:

a biological substance process input port; and

a plurality of dispense ports; and

a set of dispensing protrusions connected to the dispense ports.

9. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a processing plate piercer.

10. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a pressure aperture.

11. (Original) A device as in claim 1, wherein the at least one of the processing stations comprises a seal positioned and arranged for interaction with the container.

12. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a collector plate dispenser.

13. (Original) A device as in claim 1, wherein at least one of the processing stations comprises a collector plate sealer.

14. (Currently amended) A devise as in claim 1, wherein said at least two processing stations comprise at least two multi-sample, biological sample container processing stations and further comprising:

guides between the at least two multi-sample, biological sample container processing stations;, and

stops at a plurality of the at least two multi-sample, biological sample container processing stations.

15. (Original) A device as in claim 14, wherein at least one processing stations comprises a seal positioned and arranged for contact with a sample container.

16. (Original) A device as in claim 15, wherein the least one processing station comprising a seal further comprises a pressure aperture.

17. (Original) A device as in claim 14, further comprising a slideable actuator mounted between the at least two processing stations.

18. (Currently amended) A system for treatment of a plurality of biological samples in a multi-sample container, the system comprising:

means for moving a first multi-sample container to a first processing station;

means for processing the first multi-sample container at the first processing station;

means for moving the first multi-sample container to a second processing station;

means for moving a second multi-sample container to the first processing station;

means for processing the first multi-sample container at the second processing station; and

means for processing the second multi-sample container at the first processing station.

19. (Currently amended) A system as in claim 18, wherein said means for moving the first multi-sample container is operated during at least a portion of the moving the second multi-sample container.

20. (Currently amended) A system as in claim 18, wherein said means for processing the first multi-sample container at the second processing stations ~~operates~~ occurs during at least a portion of the processing of the second multi-sample container at the first ~~second~~ processing station.

21. (Currently amended) A system as in claim 18, wherein said means for processing the first multi-sample container at the first processing station comprises means for contacting a processing fluid with the biological samples in the first multi-sample container.

22. (Cancelled)

23. (Cancelled)

24. (Currently amended) A system as in claim 1<u>8,</u> wherein said means for processing the first multi-sample container at the first processing station comprises means for agitating the first multi-sample container.

25. (Currently amended) A system as in claim 1<u>8,</u> wherein said means of processing the first multi-sample container at the first processing station comprises means for creating an aperture for at least one sample in the first multi-sample container.

26. (Currently amended) A system as in claim <u>25, </u>~~6~~ wherein said means for creating an aperture comprises means for piercing the multi-sample.

27. (Currently amended) A system as in claim <u>26, </u>~~8~~ wherein said means for piercing comprises an elongate member.

28. (Currently amended) A system as in claim <u>25, </u>~~6~~ wherein said means for processing comprises means for removing of a fluid through the aperture.

29. (Currently amended) A system as in claim <u>28, </u>~~17~~ wherein said means for removing comprises means for creating a pressure differential between an interior well of the multi-sample container and the aperture, wherein the pressure is greater in the well than at the aperture.

30. (Currently amended) A system as in claim 1<u>8,</u> wherein said means for moving comprises means for pushing the multi-sample container.

31. (Currently amended) A system as in claim 18, wherein said means for moving comprises a linearly-actuated member comprising– a multi-sample container contact member.

32. (Currently amended) A system as in claim 18, wherein said means for moving comprises a track having means for guiding the multi-sample container from the first processing station to the second processing station.

33. (Currently amended) A system as in claim 32, ~~21~~ wherein said track further comprises stops for positioning the multi-sample container at the first processing station and at the second processing station.

34. (Currently amended) A system as in claim 18, further comprising:

means for receiving the first multi-sample container, at a first processing location;

means for guiding the first multi-sample container to a second processing location;

means for holding the first multi-sample container at the second processing location;~~,~~ and

means for receiving a second multi-sample container at the first processing location.

35. (Withdrawn) A method for treatment of a plurality of biological samples in multi-sample container, the method comprising:

moving a first multi-sample container to a first processing station,

processing the first multi-sample container at the first processing station,

moving the first multi-sample container to a second processing station

moving a second multi-sample container to the first processing station

processing the first multi-sample container at the second processing station

processing the second multi-sample container at the first processing station.

36. (Withdrawn) A system for harvesting polynucleotides from a growth plate in which bacteria that include the polynucleotides reside and in which growth media reside, the method comprising:

means for inserting into the growth plate a lysis fluid

means for agitating the lysis fluid and bacteria in the growth plate

means for creating an aperture in the growth plate

means for inserting a wash fluid into the growth plate

means for passing a gas through the growth plate

means for inserting a solubilizing fluid into the growth plate, and

means for creating a pressure differential across the processing plate whereby DNA is removed from the growth plate.

37. (Withdrawn) A system as in claim 1 wherein the lysis fluid comprises a buffer.

38. (Withdrawn) A system as in claim 1 wherein the lysis fluid comprises a substantially neutral pH.

39. (Withdrawn) A system as in claim 1 wherein the lysis fluid comprises a non-alkaline fluid.

40. (Withdrawn) A system as in claim 1 wherein the lysis fluid comprises a salt.

41. (Withdrawn) A system as in claim 1 wherein the salt comprises an acetate-containing salt.

42. (Withdrawn) A system as in claim 2D wherein the acetate-containing salt consists essentially of a TRIS acetate salt.

43. (Withdrawn) A system as in claim 2D wherein the salt consists essentially of a chaotropic salt.

44. (Withdrawn) A system as in claim 1 wherein the lysis fluid comprises a detergent.

45. (Withdrawn) A system as in claim 1 wherein the wash fluid comprises a buffer.

46. (Withdrawn) A system as in claim 1 wherein the wash fluid comprises an enzyme.

47. (Withdrawn) A system as in claim 3A wherein the enzyme comprises an RNA-specific enzyme.

48. (Withdrawn) A system as in claim 3A wherein the enzyme comprises a non-DNA specific enzyme.

49. (Withdrawn) A system as in claim 3A wherein the enzyme is chosen from a group consisting essentially of: DNASE, RDNASE, or PROTEASE.

50. (Withdrawn) A system as in claim 1 wherein the wash fluid solubilises lipids, chaotropic salts, and carbohydrates, faster than the wash fluid solubilises DNA.

51. (Withdrawn) A system as in claim 1 wherein the wash fluid comprises alcohol.

52. (Withdrawn) A system as in claim 3B wherein a majority of the wash fluid comprises alcohol.

53. (Withdrawn) A system as in claim 3D wherein the wash fluid comprises between 30% and 98% by volume.

54. (Withdrawn) A system as in claim 1 further comprising:
means for removing the wash fluid from the growth plate and
means for reinserting the wash fluid into the growth plate.

55. (Withdrawn) A system as in claim 1 further comprising means for inserting of the wash fluid into the growth plate before the removal of the lysis fluid.

56. (Withdrawn) A system as in claim 7 wherein said means for inserting the wash fluid operates before said means for removing the lysis fluid.

57. (Withdrawn) A system as in claim 1 further comprising means for inserting a further wash fluid after removal of the wash fluid.

58. (Withdrawn) A method for harvesting polynucleotides from a growth plate in which bacteria that include the polynucleotides reside and in which growth media reside, the method comprising:

inserting into the growth plate a lysis fluid

agitating the lysis fluid and bacteria in the growth plate

creating an aperture in the growth plate

inserting a wash fluid into the growth plate

passing a gas through the growth plate

inserting a solubilizing fluid into the growth plate, and

creating a pressure differential across the processing plate whereby DNA is removed from the growth plate.

59. (Withdrawn) A method as in claim 1 wherein the lysis fluid comprises a buffer.

60. (Withdrawn) A method as in claim 1 wherein the lysis fluid comprises a substantially neutral pH.

61. (Withdrawn) A method as in claim 1 wherein the lysis fluid comprises a non-alkaline fluid.

62. (Withdrawn) A method as in claim 1 wherein the lysis fluid comprises a salt.

63. (Withdrawn) A method as in claim 1 wherein the salt comprises an acetate-containing salt.

64. (Withdrawn) A method as in claim 2D wherein the acetate-containing salt consists essentially of a TRIS acetate salt.

65. (Withdrawn) A method as in claim 2D wherein the salt consists essentially of a chaotropic salt.

66. (Withdrawn) A method as in claim 1 wherein the lysis fluid comprises a detergent.

67. (Withdrawn) A method as in claim 1 wherein the wash fluid comprises a buffer.

68. (Withdrawn) A method as in claim 1 wherein the wash fluid comprises an enzyme.

69. (Withdrawn) A method as in claim 3A wherein the enzyme comprises an RNA-specific enzyme.

70. (Withdrawn) A method as in claim 3A wherein the enzyme comprises a non-DNA specific enzyme.

71. (Withdrawn) A method as in claim 1 wherein the wash fluid poorly solubilises DNA.

72. (Withdrawn) A method as in claim 1 wherein the wash fluid solubilises lipids, chaotropic salts, and carbohydrates, faster than the wash fluid solubilises DNA.

73. (Withdrawn) A method as in claim 1 wherein the wash fluid comprises alcohol.

74. (Withdrawn) A method as in claim 3B wherein a majority of the wash fluid comprises alcohol.

75. (Withdrawn) A method as in claim 1 wherein the solubilizing fluid comprises water.

76. (Withdrawn) A method as in claim 1 wherein the gas comprises air.

77. (Withdrawn) A method as in claim 1 further comprising:
removing the wash fluid from the growth plate and
reinserting the wash fluid into the growth plate.

78. (Withdrawn) A method as in claim 6 wherein said removing and reinserting occur before said passing gas.

79. (Withdrawn) A method as in claim 6A wherein said removing and reinserting occur after said passing gas.

80. (Withdrawn) A method as in claim 6 further comprising holding the wash fluid in the growth plate.

81. (Withdrawn) A method as in claim 6 further comprising holding the wash fluid in the growth plate for a period long enough for an enzyme in the wash fluid to degrade RNA from silica in the growth plate.

82. (Withdrawn) A method as in claim 1 further comprising preventing foaming of the lysis fluid during removal of the lysis fluid.

83. (Withdrawn) A method as in claim 7 wherein said preventing comprises removing air from contact with the lysis fluid in the growth plate during removal of the lysis fluid.

84. (Withdrawn) A method as in claim 7A wherein said removing air comprises insertion of the wash fluid into the growth plate before the removal of the lysis fluid.

85. (Withdrawn) A method as in claim 1 wherein said inserting the wash fluid occurs before removing the lysis fluid.

86. (Withdrawn) A method as in claim 1 further comprising inserting a further wash fluid after removal of the wash fluid.

87. (Withdrawn) A method as in claim 8 wherein said further wash fluid has an alcohol content greater than the alcohol content of the wash fluid.

88. (Withdrawn) A method as in claim 1 wherein said passing a gas comprises pulling air through the growth plate.

89. (Withdrawn) A method as in claim 1 wherein said passing a gas comprises pushing air through the growth plate.

90. (Withdrawn) A method as in claim 1 wherein said inserting a solubilizing fluid in the growth plate comprises inserting water in the growth plate.

91. (Withdrawn) A method as in claim 1 wherein said creating a pressure differential comprises placing a collection plate near the aperture and drawing a gas from at least one edge of the collection plate.

92. (Withdrawn) A biological sample preparation device comprising:

a plurality of reaction volumes wherein each reaction volume is in a fixed relation to other reaction volumes, and

a recessed sample extraction location for each reaction volume.

93. (Withdrawn) A device as in claim 101 wherein said recessed sample extraction location comprises at least one projection beyond each of said recessed sample extraction locations.

94. (Withdrawn) A system as in claim 102 wherein said at least one projection comprises a single projection around all of said recessed sample extraction locations.

95. (Withdrawn) A system as in claim 101 further comprising a skirt around each of said recessed sample extraction locations.

96. (Withdrawn) A system as in claim 111 wherein said skirt comprises a sealing edge.

97. (Withdrawn) A system as in claim 101 further comprising an elongate member around each of said recessed sample extraction locations.

98. (Withdrawn) A system as in claim 112 wherein at least one of said elongate members comprises a cylindrical cross-section.

99. (Withdrawn) A system as in claim 112 wherein said elongate member comprises a polygonal cross-section.

100. (Withdrawn) A system as in claim 101 wherein the reaction volumes comprise an open end of said means for maintaining a reaction volume.

101. (Withdrawn) A system as in claim 140 wherein said reaction volume for each sample comprises an elongate member.

102. (Withdrawn) A system as in claim 101 further comprising spacer members between said plurality of the reaction volumes.

103. (Withdrawn) A system as in claim 101 further comprising a substantially unitary structure defining said plurality of reaction volumes and defining said recessed sample extraction location for each reaction volume.

104. (Withdrawn) A system as in claim 101 further comprising an openable, centrifugal sample extraction member located at each of said recessed sample extraction locations.

105. (Withdrawn) A system as in claim 60 wherein said openable, centrifugal member comprises a piercable material.

106. (Withdrawn) A system as in claim 61 wherein said piercable material comprises re-sealing material.

107. (Withdrawn) A system as in claim 61 wherein said piercable material comprises non-re-sealing material.

108. (Withdrawn) A device as in claim 101 further comprising silica in at least one of plurality of reaction volumes.

109. (Withdrawn) A device as in claim 170 wherein said silica comprises diatomaceous earth.

110. (Withdrawn) A device as in claim 170 wherein said silica comprises silicon dioxide.

111. (Withdrawn) A device as in claim 101 further comprising polynucleotide growth media in at least one of the plurality of reaction volumes.

112. (Withdrawn) A device as in claim 101 further comprising silica and polynucleotide growth media in at least one of plurality of reaction volumes.

113. (Withdrawn) A system for producing a plurality of polynucleotides from at least one colony of host cells, the system comprising:

means for maintaining a reaction volume for each polynucleotide,

means for maintaining a distance between the reaction volumes,

means for receiving the plurality of polynucleotides in the reaction volumes, and

means for providing a sample extraction path from each reaction volume.

114. (Withdrawn) A system as in claim 1 further comprising means for providing at least one recess of at least one sample extraction path.

115. (Withdrawn) A system as in claim 2 wherein said means for providing at least one recess of at least one sample extraction path comprises at least one projection beyond said means for providing at least on sample extraction path.

116. (Withdrawn) A system as in claim 3 wherein said at least one projection resides around all of the means for providing a sample extraction path.

117. (Withdrawn) A system as in claim 2 wherein said means for providing at least one recess of at least one sample extraction path comprises a skirt around all the means for providing a sample extraction path from each reaction volume.

118. (Withdrawn) A system as in claim 2 wherein said means for providing at least one recess of at least one sample extraction path comprises an elongate member around each means for providing a sample extraction path from each reaction volume.

119. (Withdrawn) A system as in claim 12 wherein at least one of said elongate members comprises a cylindrical cross-section.

120. (Withdrawn) A system as in claim 12 wherein said elongate member comprises a polygonal cross-section.

121. (Withdrawn) A system as in claim 1 wherein said polynucleotide comprises a plasmid.

122. (Withdrawn) A system as in claim 1 wherein said means for maintaining a reaction volume for each polynucleotide comprises an elongate member.

123. (Withdrawn) A system as in claim 30 wherein said elongate member includes a cross-sectional area having a curved shape.

124. (Withdrawn) A system as in claim 30 wherein said elongate member includes a cross-sectional area having a polygonal shape.

125. (Withdrawn) A system as in claim 1 wherein said means for maintaining a distance between the reaction volumes comprises spacer members between a plurality of the reaction volumes.

126. (Withdrawn) A system as in claim 1 wherein said means for maintaining a reaction volume for each polynucleotide and said means for maintaining a distance between the reaction volumes comprise a substantially unitary structure defining spaced reaction volumes in the substantially unitary structure.

127. (Withdrawn) A system as in claim 1 wherein said means for maintaining a reaction volume for each polynucleotide comprises a plurality of reaction vessels and said means for maintaining a distance between the reaction volumes comprises a set of spacers.

128. (Currently Amended) A device ~~devise~~ comprising:

at least two multi-sample, biological sample container processing stations;~~,~~

guides between the at least two multi-sample, biological sample container processing stations;~~,~~ and

stops at a plurality of the at least two multi-sample, biological sample container processing stations.

129. (Currently Amended) A device as in claim 128, wherein at least one processing stations comprises a seal positioned and arranged for contact with a sample container.

130. (Currently Amended) A device as in claim 129 ~~2~~, wherein the least one processing station comprising a seal further comprises a pressure aperture.

131. (Currently Amended) A device as in claim 128, further comprising a slideable actuator mounted between the at least two processing stations.

132. (Currently Amended) A system for manipulation of multi-sample biological sample containers, the system comprising:

means for receiving a first sample container~~;~~ at a first processing location;

means for guiding the first sample container to a second processing location;

means for holding the first sample container at the second processing location;~~;~~ and

means for receiving a second sample container at the first processing location.

133. (Currently Amended) A system as in claim 132, further comprising means for advancing the multi-sample container between the first and the second processing locations.

134. (Currently Amended) A system as in claim 133, ~~2~~ wherein the means for advancing comprises an actuator,

135. (Currently Amended) A system as claim 133, ~~3~~ wherein the means for advancing comprises a linear-motion actuator.

136. (Currently Amended) A system as in claim 135, ~~4~~ wherein the linear-motion actuator comprises ~~an~~ elongate member residing between the first and the second processing stations wherein the elongate member includes an protrusion slideably connected between the first and the second processing stations.

137. (Currently Amended) A system as in claim 132, ~~1~~ further comprising means for sliding the multi-sample container between the first and the second processing locations.

138. (Currently Amended) A system as in claim 137, ~~10~~ wherein said means for sliding comprises a grooved track.

139. (Currently Amended) A system as in claim 132, ~~1~~ wherein said means for receiving comprises a first recess in a track.

140. (Currently Amended) A system as in claim 132, ~~1~~ wherein said means for guiding comprises guides along a track.

141. (Currently Amended) A system as in claim 132, ~~1~~ wherein said means for holding comprises stops in the track.

142. (Currently Amended) A system as in claim 132, ~~1~~ wherein said means for receiving a second sample container at the first processing location comprises a second recess in the track.

143. (Withdrawn) A method of manipulation of multi-sample biological sample containers, the method comprising:

receiving a first sample container, at a first processing location

guiding the first sample container to a second processing location

holding the first sample container at the second processing location, and

receiving a second sample container at the first processing location.

144. (Withdrawn) A method as in claim 1further comprising advancing the multi-sample container between the first and the second processing locations.

145. (Withdrawn) A method as in claim 1 further comprising sliding the multi-sample container between the first and the second processing locations.

146. (Withdrawn) A dispenser of biological substance process fluid comprising:

a reservoir comprising:

a biological substance process input port and

a plurality of dispense ports,

a set of dispensing protrusions connected to the dispense ports.

147. (Withdrawn) A dispenser as in claim 1 wherein said plurality of dispense ports is arranged in a substantially two-dimensional array.

148. (Withdrawn) A dispenser as in claim 1 wherein said reservoir comprises a cross-section that tapers from said input port.

149. (Withdrawn) A dispenser as in claim 1 wherein said dispensing protrusions are recessed in a guard member.

150. (Withdrawn) A dispenser as in claim 4 wherein said guard member comprises a set of elongated recesses from said dispensing protrusions.

151. (Withdrawn) A system of dispensing a biological substance process fluid from a dispensing container to multiple samples of biological substances, the system comprising:

means for receiving from the dispensing container a multiple sample amount of biological substance process fluid, wherein the multiple sample amount is sufficient for processing the multiple samples of biological substances,

means for dividing the amount into a set of individual sample amounts in a multidimensional array, and

means for substantially simultaneously dispensing the set of individual sample amounts to a set of individual samples.

152. (Withdrawn) A system as in claim 1 wherein said means for receiving comprises an accumulator of the multiple sample amount proximate a set of individual sample dispense paths.

153. (Withdrawn) A system as in claim 1 wherein said means for dividing comprises a manifold of individual sample dispense paths from a reservoir.

154. (Withdrawn) A system as in claim 1 wherein said means for dispensing comprises means for streaming the set of individual sample amounts to the multiple samples.

155. (Withdrawn) A system as in claim 4 wherein said means for streaming comprises an injector outside a container holding the multiple samples.

156. (Withdrawn) A system as in claim 4 wherein said means for streaming comprises a recessed injector.

157. (Withdrawn) A system as in claim 1 wherein the means for substantially simultaneously dispensing is substantially stationary during the receiving, dividing, and dispensing.